URS Greiner Woodward Clyde
A Division of URS Corporation

30775 Bainbridge Road, Suite 200
Solon, OH 44139
Tel: 440.349.2708
Fax: 440.349.1514
Offices Worldwide

April 5, 2000
38-06E06191.03

Mr. David Pratt
Division of Hazardous Waste Remediation
NYS Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, NY 14414

Subject: Interim Remedial Measure Quarterly Progress Report
October - December 1999
Griffin Technology, Inc. Facility
Farmington, New York

Dear Mr. Pratt:

On behalf of Diebold, Inc., URS Greiner Woodward Clyde is pleased to submit the enclosed Interim Remedial Measure Quarterly Progress Report to the New York State Department of Environmental Conservation (NYSDEC). Enclosed please find three copies of the report for your review and consideration. These reports contain the information collected during operation of the Interim Remedial Measure system at the Griffin Technology, Inc. facility in Farmington, New York between October and December 1999.

This document is submitted in accordance with the Order on Consent (Index No. B8-315-90-01) agreement between the NYSDEC and Griffin Technology, Inc. Please contact us if you require further information.

Sincerely,

URS Greiner Woodward Clyde

Lisa M. Havemann

Lisa M. Havemann
Civil Engineer

Mark T. Schmidt

Mark T. Schmidt
Project Geologist

Attachment

cc. Mark Tucker - Diebold, Inc.
David A Rinehart - Diebold, Inc.

W:\Diebold\6E06191\Reports\11thqtr\NYSDEC.rtf

FINAL REPORT

INTERIM REMEDIAL MEASURE QUARTERLY PROGRESS REPORT (OCTOBER-DECEMBER 1999)

FORMER GRIFFIN TECHNOLOGY FACILITY FARMINGTON, NEW YORK INDEX NO. (B8-315-90-01)

Prepared for:
Diebold, Inc.
Canton, Ohio

March 31, 2000

URS Greiner Woodward Clyde
A Division of URS Corporation

30775 Bainbridge Road
Suite 200
Solon, Ohio 44139
440-349-2708
Project No. 38-06E06191.03

CERTIFICATION

INTERIM REMEDIAL MEASURE QUARTERLY PROGRESS REPORT

OCTOBER – DECEMBER 1999

GRIFFIN TECHNOLOGY, INC. FACILITY

TOWN OF FARMINGTON

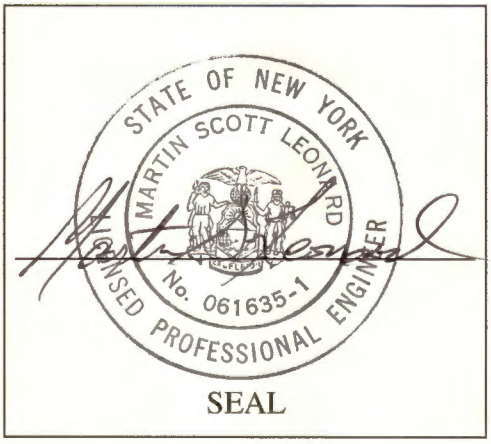
ONTARIO COUNTY, NEW YORK

The enclosed Quarterly Progress Report has been reviewed by the undersigned and found to be consistent with the requirements of the Order on Consent (Index No. B8-315-90-01) entered into by the New York State Department of Environmental Conservation and Griffin Technology, Inc.

Name: Martin S. Leonard P.E.

Title: Consulting Professional Engineer

Date: April 3, 2000



SEAL

Table of Contents

List of Tables

List of Figures

List of Appendices

This report presents the information collected by URS Greiner Woodward Clyde (URSGWC) between October and December 1999 during operation of the Interim Remedial Measure (IRM) system at the Griffin Technology, Inc. (GTI) site located at 6132 Victor-Manchester Road in the Town of Farmington, Ontario County, New York. The IRM system consists of four wells equipped with groundwater extraction pumps, which have been plumbed to discharge groundwater into the local sanitary sewer system. A general location map is included as Figure 1. The system layout is shown in Figure 2.

The IRM system was proposed in the *IRM Work Plan* submitted to the New York State Department of Environmental Conservation (NYSDEC) on July 10, 1996. The Work Plan was prepared in accordance with the Order on Consent agreement (Index No. B8-315-90-01) entered into by GTI and the NYSDEC. Information supporting the selected IRM, such as a Field Sampling Plan (FSP), Quality Assurance Project Plan (QAPP), and Health and Safety Plan (HASP) were included in the Work Plan.

On September 27, 1996, GTI submitted an *Interim Remedial Measure Program, Final Design Document* to the NYSDEC. This document contained the proposed layout and detail drawings for the IRM system and a copy of the letter approving the discharge of recovered groundwater into the local publicly-owned treatment works (POTW) sanitary sewer.

During December 1996 and January 1997, the IRM components were installed at the site. The components included three recovery wells (RW-1 through RW-3) and one deep monitoring well with the potential to be converted to a recovery well in the future. Following approval by the NYSDEC and the Canandaguia-Farmington Water and Sewer District to discharge recovery water into the sanitary sewer system, the system was placed on-line with three recovery wells. The IRM system began operating on February 18, 1997. Between April and June 1999, one deep monitoring well (MW-2D) was converted to a recovery well (RW-4) and brought online.

In April 1999, a subsurface soil investigation was conducted at the GTI site to evaluate current soil conditions west of the manufacturing building. The scope of work and results are detailed in the *Soil Investigation Report*, dated June 25, 1999.

The activities performed during this three-month period of operation are described in Section 2.0. Information collected during this period of operation is presented in Section 3.0. Summary information is presented in Section 4.0.

The activities performed during this quarter of IRM operation consisted of measuring monitoring well groundwater elevations, recording the quantity of water discharged by the IRM system, and collecting samples of the IRM system effluent for laboratory analysis. Each of these activities are described in greater detail below.

2.1 HYDRAULIC HEAD MEASUREMENT

During this quarter of IRM operation, hydraulic head (groundwater elevation) measurements were collected an average of twice per month from each on-site groundwater well and piezometer and off-site monitoring well MW-11D. Hydraulic head measurements were also collected monthly from off-site monitoring wells MW-6S and MW-6D. These off-site wells are located in the immediate vicinity of the IRM system. Measurements were collected using an electronic water level indicator capable of measuring the water elevation to the nearest 0.01 feet.

2.2 EFFLUENT MONITORING, SAMPLING AND ANALYSIS

At the end of each month of operation, the quantity of effluent discharged by the IRM system was recorded from a totalizing flow meter located on the common header discharge in the Central Access Vault. The value from the preceding months operation was subtracted from this value in order to determine the monthly effluent discharge to the Farmington Water and Sewer District wastewater treatment facility. In addition, a sample of the effluent was collected monthly from a sample port located on the header discharge in the Central Access Vault in order to evaluate the quality of the groundwater being recovered by the IRM system. The effluent samples were submitted to Columbia Analytical Services, Inc. (CASI) for analysis of volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Test Method 8260. The analytical results of the samples collected were used to report estimated loadings to the POTW.

Data collected and analytical results obtained during this quarter of IRM system operation are presented in the following subsections.

3.1 EFFLUENT OPERATING DATA AND ANALYTICAL RESULTS

A summary of the operating data and effluent analysis collected during each month of the IRM system operation is presented in Table 1. The results indicate that groundwater containing chemicals of concern (COCs) is being removed from underneath the GTI site. The only COC detected in the effluent samples during this quarter was trichloroethene (TCE). These results are consistent with earlier results, except that previously identified COCs, such as 1,1,1-trichloroethane (1,1,1-TCA), cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride, were not detected during this quarter.

Historically, TCE has consistently been the compound with the highest reported concentration in the effluent samples. The concentrations of TCE in the system effluent were generally similar to the previous quarter. The TCE concentrations were slightly higher at the beginning of this quarter and slightly lower at the end of the quarter. Laboratory data sheets for the effluent sampling during this quarter are provided in Appendix A.

The quantity of water discharged by the system was generally similar to the previous quarter. The monthly discharge was slightly lower at the beginning of the quarter and slightly higher at the end of the quarter. The lowest discharge was observed during the middle of the quarter. The quantity of water discharged by the system appears to correlate with seasonal changes in groundwater elevations.

3.2 HYDRAULIC HEAD MEASUREMENT RESULTS

Hydraulic head measurements collected during this quarter of IRM system operation are presented in Table 2. These data were used to prepare monthly groundwater elevation and flow maps for the overburden and bedrock groundwater zones (Figures 3 through 8).

During this quarter of operation, groundwater elevations were relatively low at the beginning of the quarter and then increased slightly near the end of the quarter. The groundwater contour maps from the GTI site indicate that groundwater in the overburden water-bearing zone typically flows to the south or southwest. In the bedrock water-bearing zone, groundwater generally appeared to flow toward a groundwater low area near the southwest corner of the site, in the vicinity of RW-03. The data indicate that the IRM system is continuing to influence groundwater flow patterns at the GTI site. These data are consistent with previous observed site conditions.

Based on the information collected during this quarterly monitoring period of IRM system operation, the following summary has been developed regarding environmental conditions at the GTI site:

- Groundwater flow in the overburden water-bearing zone at this site is primarily to the south and southwest. This is consistent with previous reports for the GTI site.
- The IRM system is affecting groundwater flow patterns in the vicinity of the GTI facility. The groundwater elevation data indicate the presence of a groundwater low in the bedrock water-bearing zone in the southwest portion of the site, which is in the immediate vicinity of the IRM system.
- Groundwater elevations were at relatively low levels in October 1999 and increased slightly during this quarter of operation.
- The monthly quantity of groundwater discharged by the IRM system during this quarter was similar to the previous quarter. The monthly discharge was slightly lower in the middle of the quarter (November 1999) and slightly higher at the end of the quarter (December 1999). The quantity of groundwater discharged by the system appears to correlate with seasonal changes in groundwater elevations, with lower discharge and groundwater elevations in late summer, fall, and early winter and higher discharge and groundwater elevations in late winter, spring, and early summer.
- TCE was the only COC detected in the system effluent during this quarter. The concentrations of TCE in the IRM system effluent were similar to the previous quarter. The effluent TCE concentrations decreased slightly during this quarter. The effluent TCE concentrations appear to be higher during periods of lower groundwater elevations and lower during periods of higher groundwater elevations.

Data collection activities during the next quarter of IRM operation will consist of the same activities performed during the previous months of operation. The next semi-annual sampling of all groundwater monitoring wells is scheduled to be completed in March 2000.

Tables

TABLE 1
SUMMARY OF EFFLUENT DISCHARGES TO POTW
GRIFFIN TECHNOLOGY FACILITY
FARMINGTON, NEW YORK

MONTH	DISCHARGE (GAL.)	CONCENTRATIONS TCE	1,1,1-TCA	Cis-1,2-DCE	2-BUTANONE	VINYL CHLORIDE
March 1997	320,150	610	14	6.5	ND	ND
April 1997	362,132	240	5.8	6	ND	ND
May 1997	235,601	360	9.8	ND	ND	ND
June 1997	213,976	380	12	10	ND	ND
July 1997	135,320	570	16	15	ND	ND
August 1997	68,270	700	21	13	26	ND
September 1997	70,218	810	ND	ND	ND	ND
October 1997	90,717	880	18	10	ND	ND
November 1997	93,914	690	17	12	ND	ND
December 1997	210,268	420	ND	ND	ND	ND
January 1998	456,551	250	ND	ND	ND	ND
February 1998	191,493	180	ND	ND	ND	ND
March 1998	387,910	200	5.4	ND	ND	ND
April 1998	352,742	150	ND	ND	ND	ND
May 1998	191,088	250	ND	ND	ND	ND
June 1998	96,750	320	7.5	ND	ND	ND
July 1998	270,973	200	ND	ND	ND	ND
August 1998	68,147	400	13	12	ND	ND

Notes:

1. All results expressed in micrograms per liter (µg/l).
2. No other VOC compounds detected.
3. ND indicates not detected.

URS Greiner Woodward Clyde

TABLE 1
SUMMARY OF EFFLUENT DISCHARGES TO POTW
GRIFFIN TECHNOLOGY FACILITY
FARMINGTON, NEW YORK

MONTH	DISCHARGE (GAL.)	CONCENTRATIONS TCE	1,1,1-TCA	Cis-1,2-DCE	2-BUTANONE	VINYL CHLORIDE
September 1998	44,030	510	14	15	ND	ND
October 1998	66,160	400	ND	ND	ND	ND
November 1998	44,150	440	12	ND	ND	ND
December 1998	43,580	590	22	19	ND	ND
January 1999	33,531	660	ND	ND	ND	ND
February 1999	144,720	230	ND	ND	ND	ND
March 1999	139,410	140	ND	12.0	ND	17
April 1999	188,610	170	ND	ND	ND	ND
May 1999	199,541	250	ND	ND	ND	ND
June 1999	75,780	370	ND	ND	ND	ND
July 1999	72,359	510	14	ND	ND	ND
August 1999	55,841	490	15	7.5	ND	ND
September 1999	64,019	450	ND	ND	ND	ND
October 1999	64,350	500	ND	ND	ND	ND
November 1999	58,261	450	ND	ND	ND	ND
December 1999	75,250	420	ND	ND	ND	ND

Notes:

1. All results expressed in micrograms per liter (µg/l).
2. No other VOC compounds detected.
3. ND indicates not detected.

URS Greiner Woodward Clyde

TABLE 2
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
OCTOBER - DECEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-01	641.79	10/01/99	13.57	628.22
		10/08/99	12.96	628.83
		10/30/99	13.55	628.24
		11/20/99	14.34	627.45
		12/01/99	10.89	630.90
		12/11/99	11.35	630.44
		12/29/99	8.28	633.51
MW-02S	641.28	10/01/99	DRY	DRY
		10/08/99	DRY	DRY
		10/30/99	DRY	DRY
		11/20/99	DRY	DRY
		12/01/99	DRY	DRY
		12/11/99	DRY	DRY
		12/29/99	DRY	DRY
MW-2D	642.37	Monitoring well converted to recovery well RW-4.		
MW-03	642.17	10/01/99	17.28	624.89
		10/08/99	16.91	625.26
		10/30/99	17.58	624.59
		11/20/99	18.44	623.73
		12/01/99	15.35	626.82
		12/11/99	15.19	626.98
		12/29/99	12.68	629.49

NOTES
NM indicates water elevation not measured.
DRY indicates well did not contain groundwater.

TABLE 2
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
OCTOBER - DECEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-04	641.75	10/01/99	18.65	623.10
		10/08/99	19.54	622.21
		10/30/99	19.53	622.22
		11/20/99	19.56	622.19
		12/01/99	17.44	624.31
		12/11/99	17.81	623.94
		12/29/99	18.00	623.75
MW-05S	640.85	10/01/99	20.53	620.32
		10/08/99	20.58	620.27
		10/30/99	DRY	DRY
		11/20/99	DRY	DRY
		12/01/99	20.10	620.75
		12/11/99	20.44	620.41
		12/29/99	19.12	621.73
MW-05D	641.01	10/01/99	22.61	618.40
		10/08/99	22.55	618.46
		10/30/99	22.82	618.19
		11/20/99	23.20	617.81
		12/01/99	22.29	618.72
		12/11/99	22.32	618.69
		12/29/99	21.30	619.71

NOTES
NM indicates water elevation not measured.
DRY indicates well did not contain groundwater.

TABLE 2
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
OCTOBER - DECEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-06S	636.61	10/01/99	NM	NM
		10/08/99	15.38	621.23
		10/30/99	NM	NM
		11/20/99	16.42	620.19
		12/01/99	NM	NM
		12/11/99	15.58	621.03
		12/29/99	NM	NM
MW-06D	636.83	10/01/99	NM	NM
		10/08/99	15.54	621.29
		10/30/99	NM	NM
		11/20/99	16.65	620.18
		12/01/99	NM	NM
		12/11/99	15.78	621.05
		12/29/99	NM	NM
MW-07S	634.29	10/01/99	NM	NM
		10/08/99	NM	NM
		10/30/99	NM	NM
		11/20/99	NM	NM
		12/01/99	NM	NM
		12/11/99	NM	NM
		12/29/99	NM	NM

NOTES
NM indicates water elevation not measured.
DRY indicates well did not contain groundwater.

TABLE 2
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
OCTOBER - DECEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-07D	634.16	10/01/99	NM	NM
		10/08/99	NM	NM
		10/30/99	NM	NM
		11/20/99	NM	NM
		12/01/99	NM	NM
		12/11/99	NM	NM
		12/29/99	NM	NM
MW-09S	630.16	10/01/99	NM	NM
		10/08/99	NM	NM
		10/30/99	NM	NM
		11/20/99	NM	NM
		12/01/99	NM	NM
		12/11/99	NM	NM
		12/29/99	NM	NM
MW-09D	630.29	10/01/99	NM	NM
		10/08/99	NM	NM
		10/30/99	NM	NM
		11/20/99	NM	NM
		12/01/99	NM	NM
		12/11/99	NM	NM
		12/29/99	NM	NM

NOTES
NM indicates water elevation not measured.
DRY indicates well did not contain groundwater.

TABLE 2
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
OCTOBER - DECEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-10S	629.00	10/01/99	NM	NM
		10/08/99	NM	NM
		10/30/99	NM	NM
		11/20/99	NM	NM
		12/01/99	NM	NM
		12/11/99	NM	NM
		12/29/99	NM	NM
MW-10D	626.80	10/01/99	NM	NM
		10/08/99	NM	NM
		10/30/99	NM	NM
		11/20/99	NM	NM
		12/01/99	NM	NM
		12/11/99	NM	NM
		12/29/99	NM	NM
MW-11D	641.89	10/01/99	18.62	623.27
		10/08/99	18.54	623.35
		10/30/99	18.45	623.44
		11/20/99	18.85	623.04
		12/01/99	18.63	623.26
		12/11/99	18.19	623.70
		12/29/99	15.96	625.93
MW-13D	636.58	10/01/99	NM	NM
		10/08/99	NM	NM
		10/30/99	NM	NM
		11/20/99	NM	NM
		12/01/99	NM	NM
		12/11/99	NM	NM
		12/29/99	NM	NM

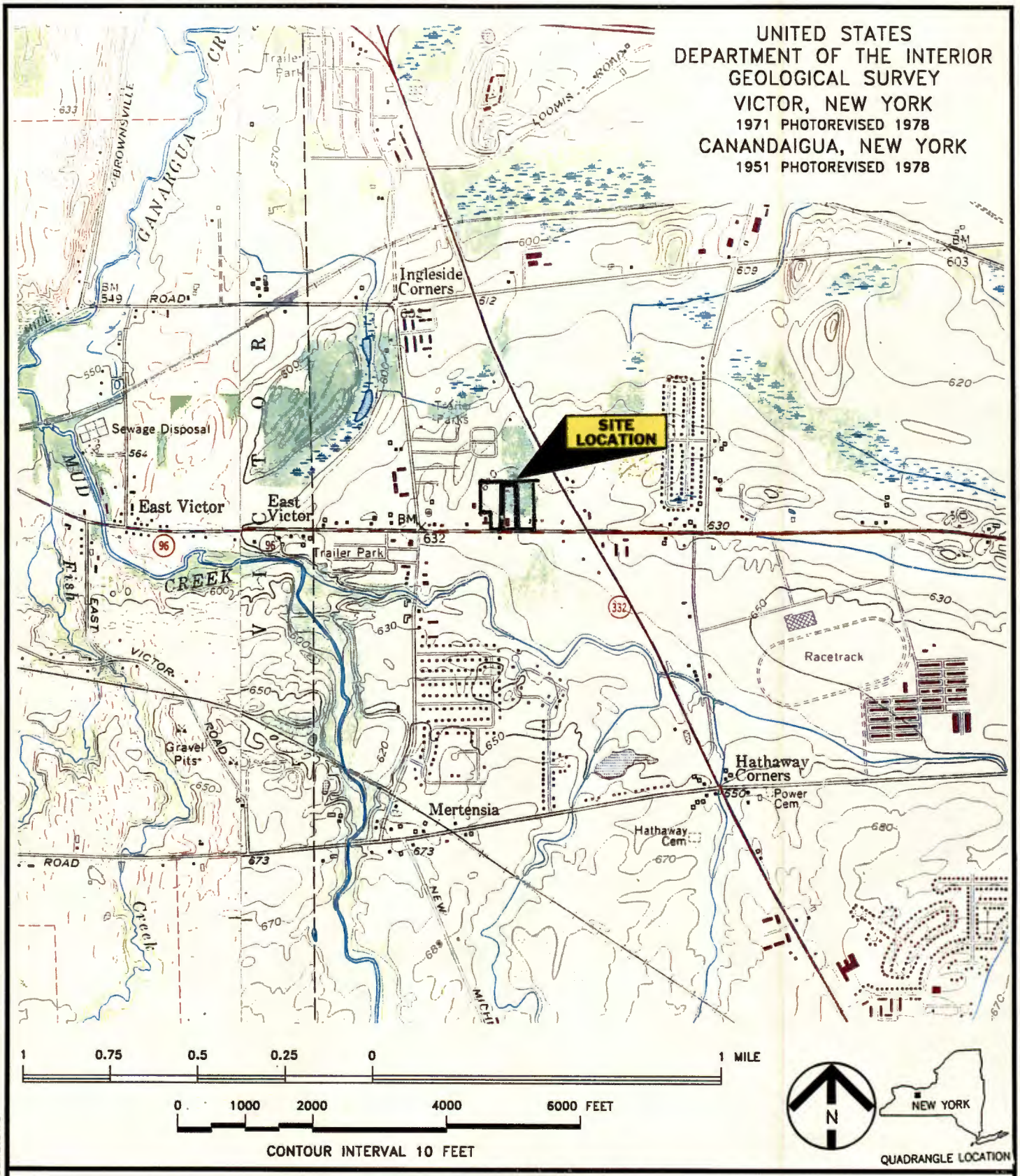
NOTES
NM indicates water elevation not measured.
DRY indicates well did not contain groundwater.

TABLE 2
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
OCTOBER - DECEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
PZ-1S	640.50	10/01/99	DRY	DRY
		10/08/99	DRY	DRY
		10/30/99	DRY	DRY
		11/20/99	DRY	DRY
		12/01/99	DRY	DRY
		12/11/99	DRY	DRY
		12/29/99	DRY	DRY
PZ-1D	640.67	10/01/99	DRY	DRY
		10/08/99	DRY	DRY
		10/30/99	DRY	DRY
		11/20/99	DRY	DRY
		12/01/99	DRY	DRY
		12/11/99	DRY	DRY
		12/29/99	DRY	DRY
PZ-2S	639.73	10/01/99	DRY	DRY
		10/08/99	DRY	DRY
		10/30/99	DRY	DRY
		11/20/99	DRY	DRY
		12/01/99	DRY	DRY
		12/11/99	DRY	DRY
		12/29/99	DRY	DRY
PZ-2D	640.01	10/01/99	20.05	619.96
		10/08/99	20.06	619.95
		10/30/99	20.35	619.66
		11/20/99	20.68	619.33
		12/01/99	19.88	620.13
		12/11/99	20.02	619.99
		12/29/99	19.58	620.43

NOTES
NM indicates water elevation not measured.
DRY indicates well did not contain groundwater.

Figures



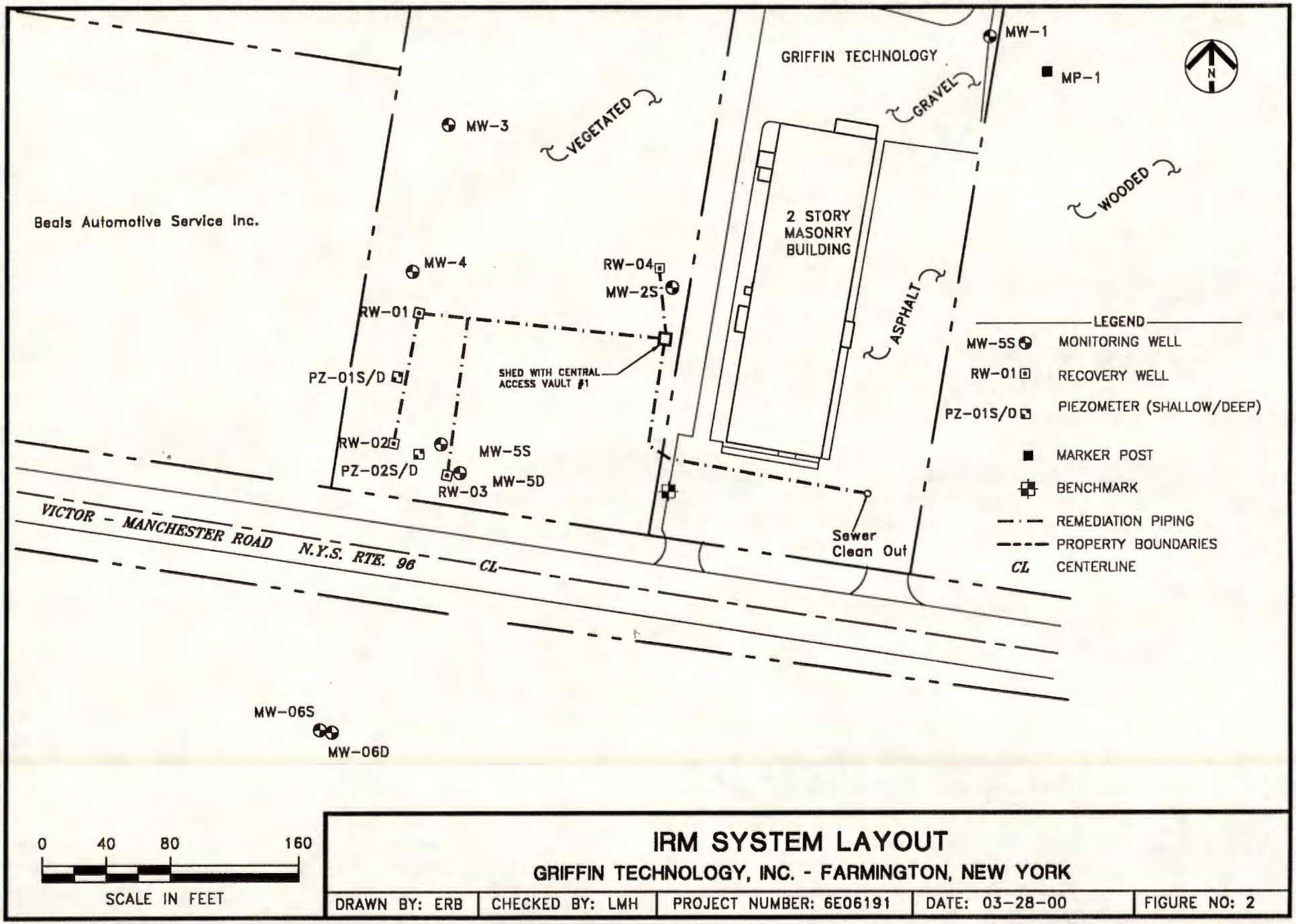
GENERAL LOCATION MAP

FORMER GRIFFIN TECHOLOGY INC. SITES - ONTARIO COUNTY - FARMINGTON, NEW YORK

DRAWN BY: ERB	CHECKED BY: MTS	PROJECT NUMBER: 6E06191	DATE: 3-28-00	FIGURE NO: 1

URS Greiner Woodward Clyde

Q:\6E06191\GLM2.DWG



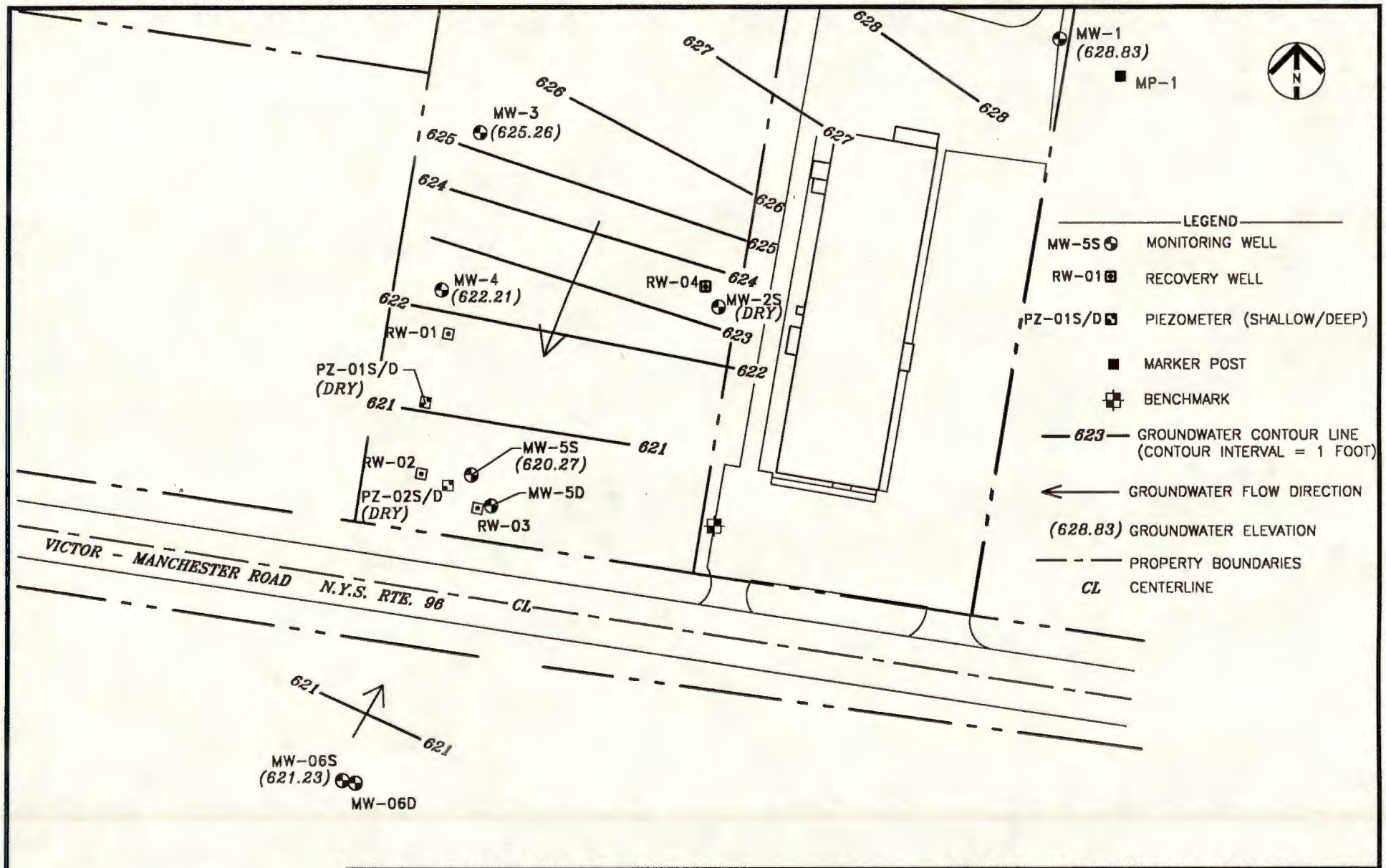
IRM SYSTEM LAYOUT

GRIFFIN TECHNOLOGY, INC. - FARMINGTON, NEW YORK

DRAWN BY: ERB	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 03-28-00	FIGURE NO: 2

Q:\6E06191\BASEMAP4.DWG

URS Greiner Woodward Clyde



0 40 80 160

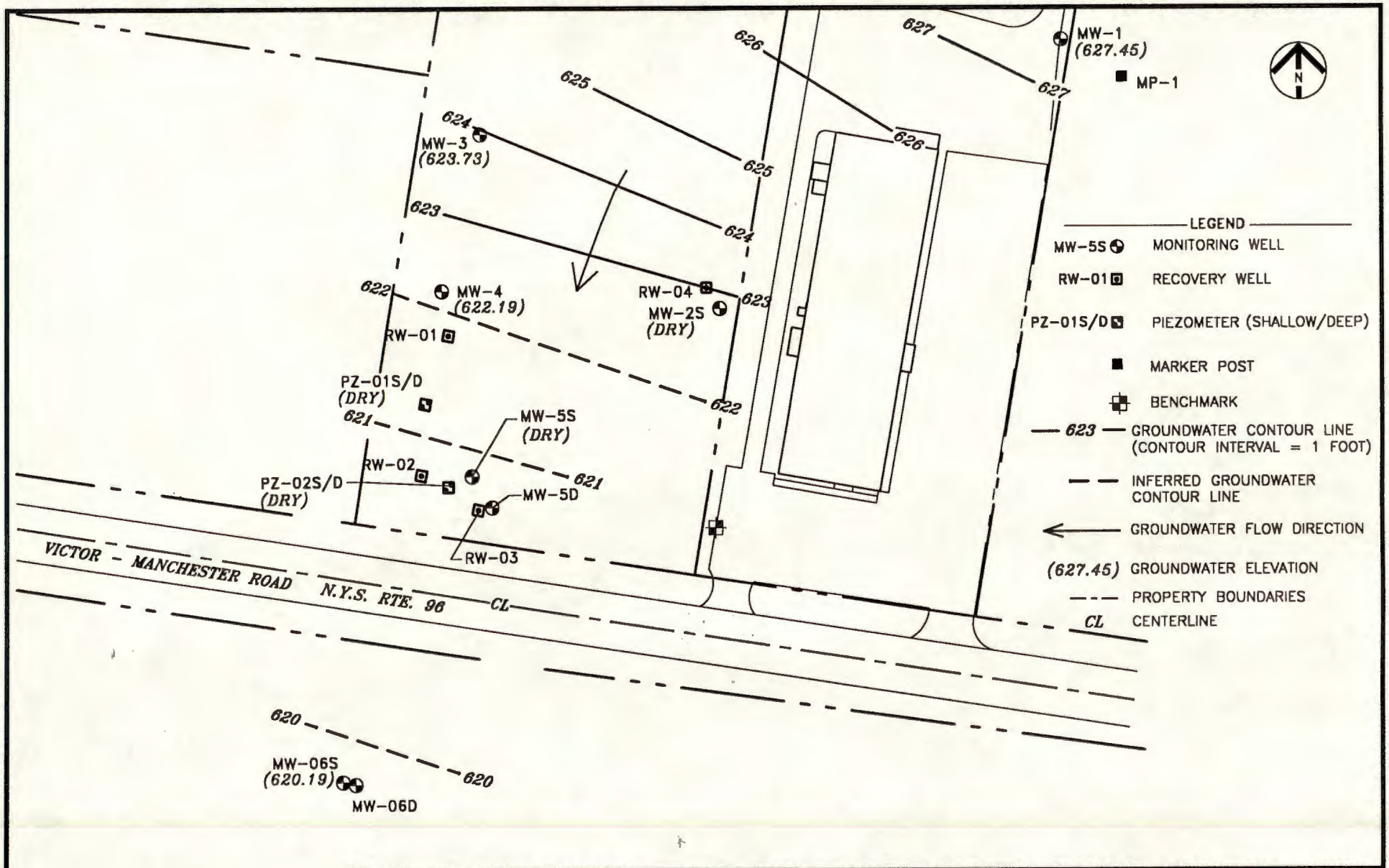
SCALE IN FEET

OVERBURDEN GROUNDWATER CONTOUR MAP
OCTOBER 8, 1999
GRIFFIN TECHNOLOGY, INC. - FARMINGTON, NEW YORK

DRAWN BY: ERB	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 03-06-00	FIGURE NO: 3

Q:\6E06191\108990F3.DWG

URS Greiner Woodward Clyde



0 40 80 160

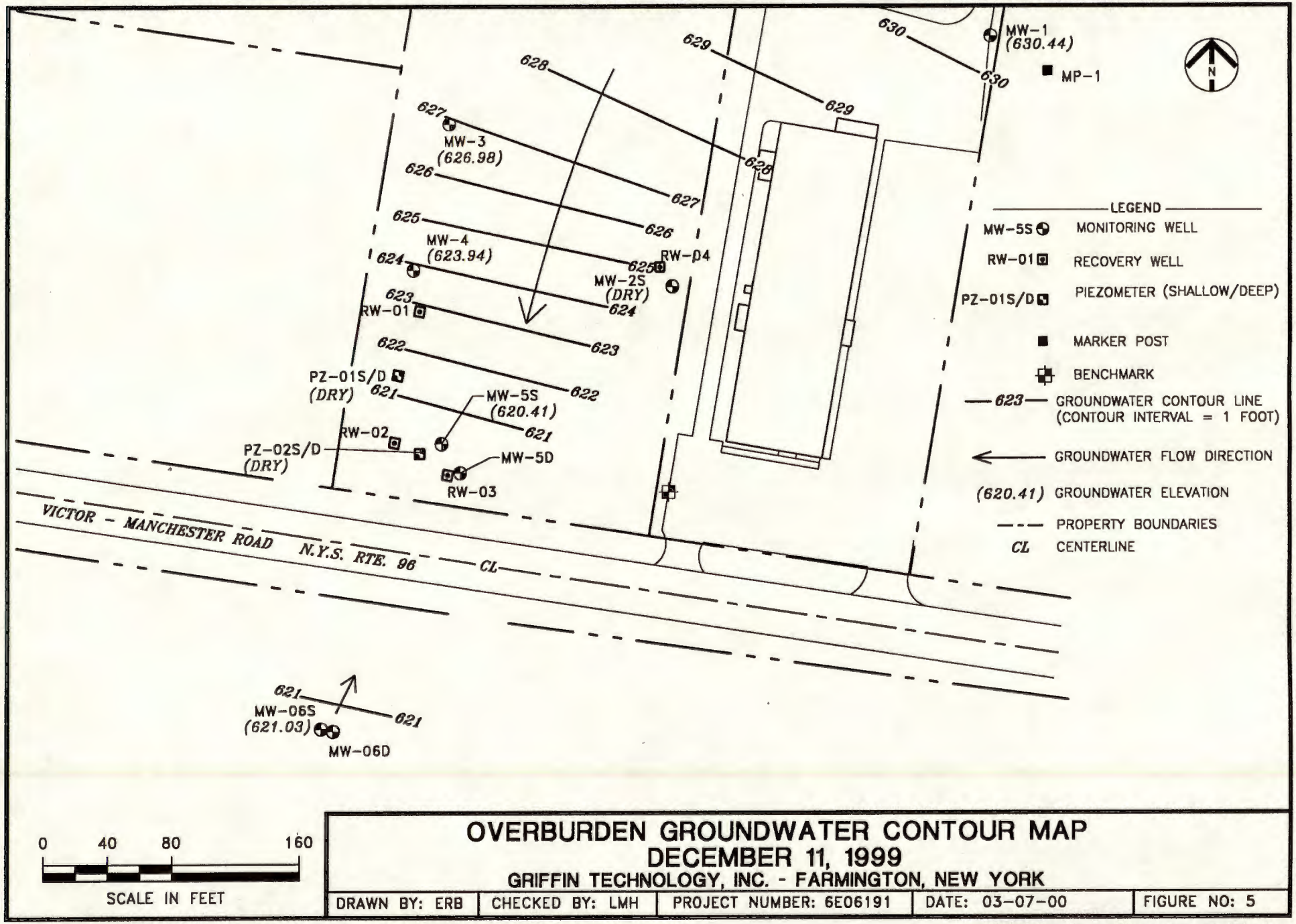
SCALE IN FEET

OVERBURDEN GROUNDWATER CONTOUR MAP
NOVEMBER 20, 1999
GRIFFIN TECHNOLOGY, INC. - FARMINGTON, NEW YORK

DRAWN BY: ERB	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 03-06-00	FIGURE NO: 4

Q:\6E06191\112099DF4.DWG

URS Greiner Woodward Clyde



0 40 80 160

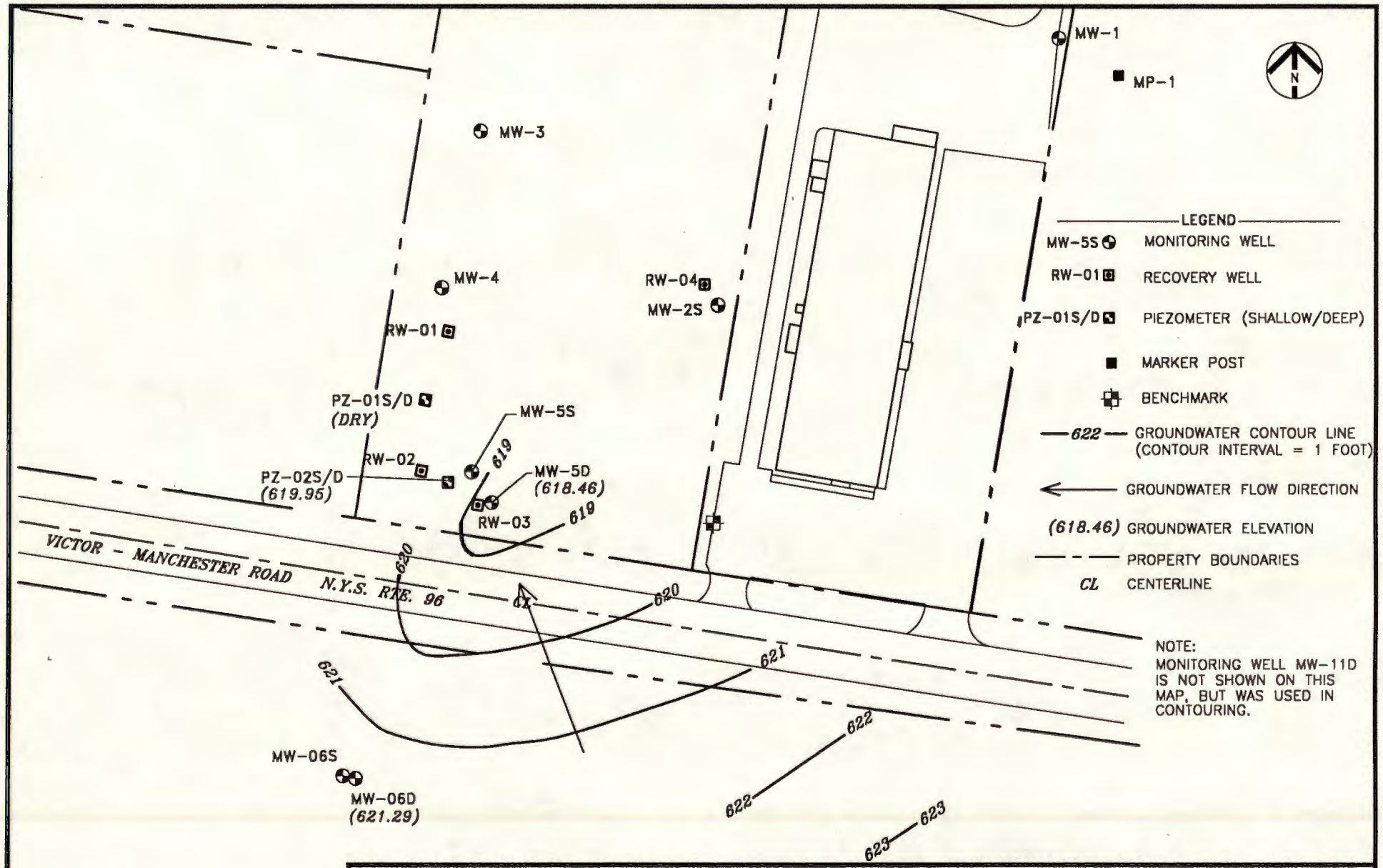
SCALE IN FEET

OVERBURDEN GROUNDWATER CONTOUR MAP
DECEMBER 11, 1999
GRIFFIN TECHNOLOGY, INC. - FARMINGTON, NEW YORK

DRAWN BY: ERB	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 03-07-00	FIGURE NO: 5

Q:\6E06191\121199S.DWG

URS Greiner Woodward Clyde

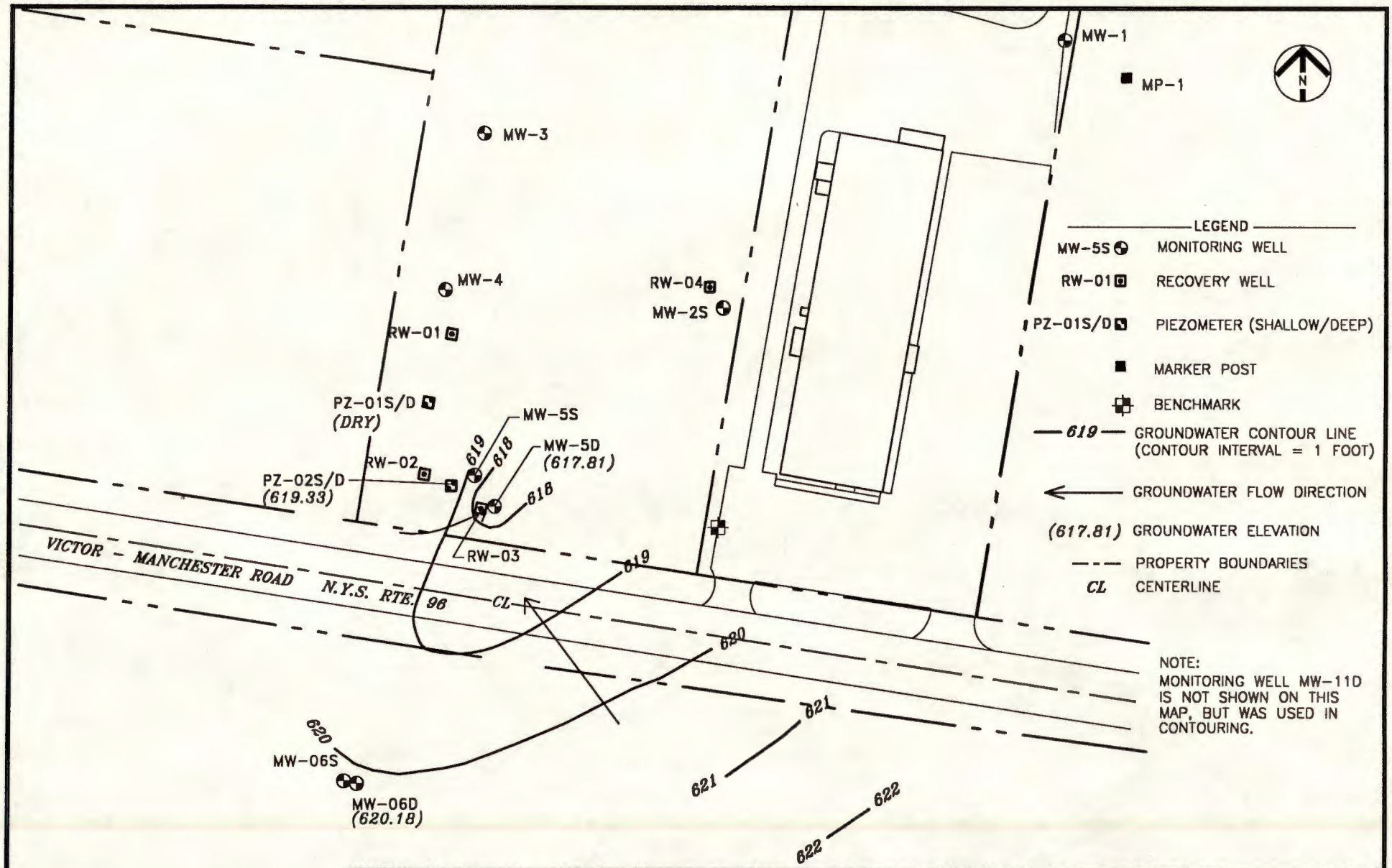


BEDROCK GROUNDWATER CONTOUR MAP
OCTOBER 8, 1999
GRIFFIN TECHNOLOGY, INC. - FARMINGTON, NEW YORK

DRAWN BY: ERB	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 03-06-00	FIGURE NO: 6

O:\6E06191\10899D.DWG

URS Greiner Woodward Clyde

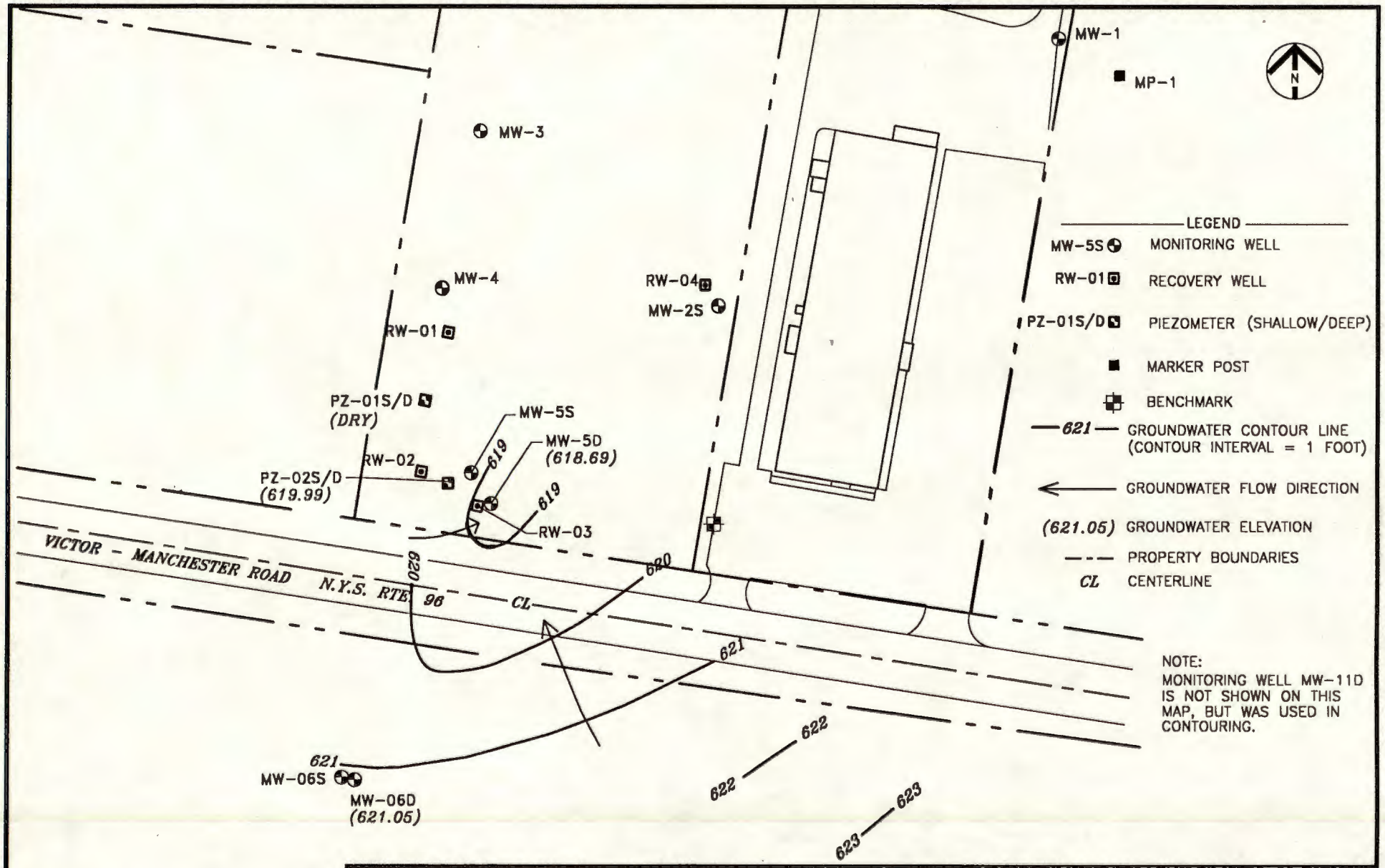


BEDROCK GROUNDWATER CONTOUR MAP
NOVEMBER 20, 1999
GRIFFIN TECHNOLOGY, INC. - FARMINGTON, NEW YORK

DRAWN BY: ERB	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 03-06-00	FIGURE NO: 7

Q:\6E06191\112099D.DWG

URS Greiner Woodward Clyde



BEDROCK GROUNDWATER CONTOUR MAP
DECEMBER 11, 1999
GRIFFIN TECHNOLOGY, INC - FARMINGTON, NEW YORK

DRAWN BY: ERB	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 03-06-00	FIGURE NO: 8

Q:\6E06191\121199D.DWG

URS Greiner Woodward Clyde

Appendix A

Columbia Analytical Services inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

October 27, 1999

Mr. Mark Schmidt
URS Greiner Woodward Clyde
30775 Bainbridge Road
Suite 200
Solon, OH 44139

PROJECT:GRIFFIN IRM
Submission #:9910000128

Dear Mr. Schmidt

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson
Client Service Manager

Enc.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal.

1 Mustard St. • Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475

Columbia Analytical Services inc.

Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

U - Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. For further explanation see case narrative / cover letter.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

N - Spiked sample recovery not within control limits.
(Flag the entire batch - Inorganic analysis only)

* - Duplicate analysis not within control limits.
(Flag the entire batch - Inorganic analysis only)

* - Also used to qualify Organics QC data outside limits.

D - Spike diluted out.

S - Reported value determined by Method of Standard Additions. (MSA)

X - As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester:	10145
CT ID # in Rochester:	PH0556
MA ID # in Rochester:	M-NY032
OH EPA # in Rochester:	VAP
NJ ID # in Rochester:	73004
RI ID # in Rochester:	158
NH ID # in Rochester:	294198-A
AIHA # in Rochester:	7889

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCL
Reported: 10/27/99

URS Greiner Woodward Clyde
Project Reference: GRIFFIN IRM
Client Sample ID : EFF-10-8-99

Date Sampled : 10/08/99 **Order #:** 331248 **Sample Matrix:** WATER
Date Received: 10/08/99 **Submission #:** 9910000128 **Analytical Run** 44143

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 10/14/99			
ANALYTICAL DILUTION: 5.00			
ACETONE	20	100 U	UG/L
BENZENE	5.0	25 U	UG/L
BROMODICHLOROMETHANE	5.0	25 U	UG/L
BROMOFORM	5.0	25 U	UG/L
BROMOMETHANE	5.0	25 U	UG/L
2-BUTANONE (MEK)	10	50 U	UG/L
CARBON DISULFIDE	10	50 U	UG/L
CARBON TETRACHLORIDE	5.0	25 U	UG/L
CHLOROBENZENE	5.0	25 U	UG/L
CHLOROETHANE	5.0	25 U	UG/L
CHLOROFORM	5.0	25 U	UG/L
CHLOROMETHANE	5.0	25 U	UG/L
DIBROMOCHLOROMETHANE	5.0	25 U	UG/L
1,1-DICHLOROETHANE	5.0	25 U	UG/L
1,2-DICHLOROETHANE	5.0	25 U	UG/L
1,1-DICHLOROETHENE	5.0	25 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	25 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	25 U	UG/L
1,2-DICHLOROPROPANE	5.0	25 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	25 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	25 U	UG/L
ETHYLBENZENE	5.0	25 U	UG/L
2-HEXANONE	5.0	25 U	UG/L
METHYLENE CHLORIDE	10	50 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	5.0	25 U	UG/L
STYRENE	10	50 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	25 U	UG/L
TETRACHLOROETHENE	5.0	25 U	UG/L
TOLUENE	5.0	25 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	25 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	25 U	UG/L
TRICHLOROETHENE	5.0	25 U	UG/L
VINYL CHLORIDE	5.0	25 U	UG/L
O-XYLENE	5.0	500	UG/L
M+P-XYLENE	5.0	25 U	UG/L
	5.0	25 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	96	%
TOLUENE-D8	(88 - 110 %)	97	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	100	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCL
Reported: 10/27/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 335259 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 44143

DATE ANALYZED : 10/14/99
ANALYTICAL DILUTION: 1.00

ANALYTE	PQL	RESULT	UNITS
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	5.0	5.0 U	UG/L
METHYLENE CHLORIDE	10	10 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	5.0	5.0 U	UG/L
STYRENE	10	10 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	95	%
TOLUENE-D8	(88 - 110 %)	97	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	103	%

COLUMBIA ANALYTICAL SERVICES, INC.
1 Mustard St., Suite 250, Rochester, NY 14609-6925
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 10-8-99 PAGE 1 OF 1

PROJECT NAME Griffin IRM
PROJECT MANAGER/CONTACT Mark Schmidt
COMPANY/ADDRESS 30775 Bainbridge Rd., Ste 200 Solon, Ohio
TEL (440) 349-2708 FAX (440) 349-1514
SAMPLER'S SIGNATURE Bob Fabian

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☐ 95-3	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	8240							PRESERVATION pH < 2.0	pH > 12	Other
EFF-10-8-99	10-8-99	11:00	331248	WATER	2											X										

RELINQUISHED BY:
Signature Bob Fabian
Printed Name Bob Fabian
Firm URS WCC
Date/Time 10-8-99 12:05

RECEIVED BY:
Signature Brian Collier
Printed Name Brian Collier
Firm CAS
Date/Time 10/8/99 1205

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
__ Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
__ 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: 60
Submission No: 10-7W

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

Cooler Receipt And Preservation Check Form

Project/Client United REF Submission Number 10-138

Cooler received on 10/8 and opened on 10/8 by BC

1. Were custody seals on outside of cooler? YES NO
   If yes, how many and where? client
2. Were signature & date correct? YES NO Delivered
3. Were custody papers properly filled out (ink, signed, etc)? YES NO
4. Did all bottles arrive in good condition (unbroken)? YES NO
5. Were all bottle labels complete (*i.e.* analysis, preservation, etc)? YES NO
6. Did all bottle labels and tags agree with custody papers? YES NO
7. Were correct bottles used for the tests indicated? YES NO
8. Were VOA vials checked for absence of air bubbles, and noted if so? YES NO
9. Where did the bottles originate? CAS/A CAS/K CAS/S CAS/L CAS/X CAS/J CAS/R
10. Temperature of cooler(s) upon receipt: 6.0

Is the temperature within 4 ± 2° C?:	Yes ☐	Yes ☐	Yes ☐	Yes ☐	Yes ☐
If No, Explain Below	No ☐	No ☐	No ☐	No ☐	No ☐

Date/Time Temperatures Taken: 10/8/95 1205

Thermometer ID: 161 Circle One: Temp Blank Sample Bottle Cooler Temp.

Explain any discrepancies:

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO_3					
2	H_2SO_4					
5-9*	P/PCBs (608 only)					

YES = All samples OK
NO = Samples were preserved at lab as listed
*If pH adjustment is required, use NaOH and/or H_2SO_4

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

CLIENT NOTIFICATION:

Columbia Analytical Services inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

December 30, 1999

Mr. Mark Schmidt
URS Greiner Woodward Clyde
30775 Bainbridge Road
Suite 200
Solon, OH 44139

PROJECT:GRIFFIN IRM
Submission #:9911000310

Dear Mr. Schmidt

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson
Client Service Manager

Enc.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal.

1 Mustard St. • Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475

Columbia Analytical Services inc.

Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

U - Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. For further explanation see case narrative / cover letter.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

N - Spiked sample recovery not within control limits.
(Flag the entire batch - Inorganic analysis only)

* - Duplicate analysis not within control limits.
(Flag the entire batch - Inorganic analysis only)

\- Also used to qualify Organics QC data outside limits.

D - Spike diluted out.

S - Reported value determined by Method of Standard Additions. (MSA)

X - As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester:	10145
CT ID # in Rochester:	PH0556
MA ID # in Rochester:	M-NY032
OH EPA # in Rochester:	VAP
NJ ID # in Rochester:	73004
RI ID # in Rochester:	158
NH ID # in Rochester:	294198-A
AIHA # in Rochester:	7889

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCL
Reported: 12/30/99

URS Greiner Woodward Clyde
Project Reference: GRIFFIN IRM
Client Sample ID : EFF-11-20-99

Date Sampled : 11/20/99 **Order #:** 343665 **Sample Matrix:** WATER
Date Received: 11/20/99 **Submission #:** 9911000310 **Analytical Run** 45802

DATE ANALYZED : 11/30/99
ANALYTICAL DILUTION: 2.50

ANALYTE	PQL	RESULT	UNITS
ACETONE	20	50 U	UG/L
BENZENE	5.0	13 U	UG/L
BROMODICHLOROMETHANE	5.0	13 U	UG/L
BROMOFORM	5.0	13 U	UG/L
BROMOMETHANE	5.0	13 U	UG/L
2-BUTANONE (MEK)	10	25 U	UG/L
CARBON DISULFIDE	10	25 U	UG/L
CARBON TETRACHLORIDE	5.0	13 U	UG/L
CHLOROBENZENE	5.0	13 U	UG/L
CHLOROETHANE	5.0	13 U	UG/L
CHLOROFORM	5.0	13 U	UG/L
CHLOROMETHANE	5.0	13 U	UG/L
DIBROMOCHLOROMETHANE	5.0	13 U	UG/L
1,1-DICHLOROETHANE	5.0	13 U	UG/L
1,2-DICHLOROETHANE	5.0	13 U	UG/L
1,1-DICHLOROETHENE	5.0	13 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	13 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	13 U	UG/L
1,2-DICHLOROPROPANE	5.0	13 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	13 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	13 U	UG/L
ETHYLBENZENE	5.0	13 U	UG/L
2-HEXANONE	10	25 U	UG/L
METHYLENE CHLORIDE	5.0	13 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	25 U	UG/L
STYRENE	5.0	13 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	13 U	UG/L
TETRACHLOROETHENE	5.0	13 U	UG/L
TOLUENE	5.0	13 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	13 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	13 U	UG/L
TRICHLOROETHENE	5.0	450	UG/L
VINYL CHLORIDE	5.0	13 U	UG/L
O-XYLENE	5.0	13 U	UG/L
M+P-XYLENE	5.0	13 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	97	%
TOLUENE-D8	(88 - 110 %)	100	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	98	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCL
Reported: 12/30/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : Order #: 346976 Sample Matrix: WATER
Date Received: Submission #: Analytical Run 45802

DATE ANALYZED : 11/30/99
ANALYTICAL DILUTION: 1.00

ANALYTE	PQL	RESULT	UNITS
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	5.0	5.0 U	UG/L
METHYLENE CHLORIDE	10	10 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	5.0	5.0 U	UG/L
STYRENE	10	10 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	97	%
TOLUENE-D8	(88 - 110 %)	98	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	97	%

Columbia Analytical Services INC.
An Employee-Owned Company
1 Mustard St., Suite 250, Rochester, NY 14609-6925
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 11-20-99 PAGE 1 OF 1

PROJECT NAME Griffin IRM
PROJECT MANAGER/CONTACT Mark Schmidt
COMPANY/ADDRESS 30775 Bainbridge Rd
Solon, Ohio
TEL (440) 349-2708 FAX (440) 349-1514
SAMPLER'S SIGNATURE Bob Fabian

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☐ 95-3	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	8240							PRESERVATION pH < 2.0	pH > 12	Other
GRIFF-11-20-99	11-20-99	08:40	343665	WATER	2											X										

RELINQUISHED BY:
Signature Bob Fabian
Printed Name Bob Fabian
Firm URSWC
Date/Time 11-20-99 09:25

RECEIVED BY:
Signature [illegible]
Printed Name Gregory A. Simoni
Firm CAS
Date/Time 11-20-99 9:25

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature Brian Collon
Printed Name Brian Collon
Firm CAS
Date/Time 11/20/99 9:23

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
__ Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
__ 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validalable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: 12.8
Submission No: 11-310

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Check Form

Project/Client WCC4 Submission Number 11-310

Cooler received on 11-20-99 and opened on 11-20-99 by [illegible]

1. Were custody seals on outside of cooler? YES NO
   If yes, how many and where? _____
2. Were signature & date correct? YES NO
3. Were custody papers properly filled out (ink, signed, etc)? YES NO
4. Did all bottles arrive in good condition (unbroken)? YES NO
5. Were all bottle labels complete (*i.e.* analysis, preservation, etc)? YES NO
6. Did all bottle labels and tags agree with custody papers? YES NO
7. Were correct bottles used for the tests indicated? YES NO
8. Were VOA vials checked for absence of air bubbles, and noted if so? YES NO
9. Where did the bottles originate? CAS/A CAS/K CAS/S CAS/L CAS/X CAS/J CAS/R
10. Temperature of cooler(s) upon receipt: 12.8

Is the temperature within 4 ± 2° C?:	Yes ☐	Yes ☐	Yes ☐	Yes ☐	Yes ☐
If No, Explain Below	No ☐	No ☐	No ☐	No ☐	No ☐

Date/Time Temperatures Taken: 9:25 11-20-99

Thermometer ID: IR Gun **Circle One:** Temp Blank Sample Bottle (IR Gun) Cooler Temp.

Explain any discrepancies: _____

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO_3					
2	H_2SO_4					
5-9*	P/PCBs (608 only)					

YES = All samples OK
NO = Samples were preserved at lab as listed
*If pH adjustment is required, use NaOH and/or H_2SO_4

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

CLIENT NOTIFICATION: _____

Columbia Analytical Services inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

January 3, 2000

Mr. Mark Schmidt
URS Greiner Woodward Clyde
30775 Bainbridge Road
Suite 200
Solon, OH 44139

PROJECT:GRIFFIN IRM
Submission #:9912000177

Dear Mr. Schmidt

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson
Client Service Manager

Enc.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal.

1 Mustard St. • Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475

Columbia Analytical Services Inc.

Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

U - Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. For further explanation see case narrative / cover letter.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

N - Spiked sample recovery not within control limits.
(Flag the entire batch - Inorganic analysis only)

* - Duplicate analysis not within control limits.
(Flag the entire batch - Inorganic analysis only)

* - Also used to qualify Organics QC data outside limits.

D - Spike diluted out.

S - Reported value determined by Method of Standard Additions. (MSA)

X - As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester:	10145	NJ ID # in Rochester:	73004
CT ID # in Rochester:	PH0556	RI ID # in Rochester:	158
MA ID # in Rochester:	M-NY032	NH ID # in Rochester:	294198-A
OH EPA # in Rochester:	VAP	AIHA # in Rochester:	7889

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCL
Reported: 01/03/00

URS Greiner Woodward Clyde
Project Reference: GRIFFIN IRM
Client Sample ID : EFF-12-11-99

Date Sampled : 12/11/99 **Order #:** 348621 **Sample Matrix:** WATER
Date Received: 12/11/99 **Submission #:** 9912000177 **Analytical Run** 46484

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 12/17/99			
ANALYTICAL DILUTION: 2.50			
ACETONE	20	50 U	UG/L
BENZENE	5.0	13 U	UG/L
BROMODICHLOROMETHANE	5.0	13 U	UG/L
BROMOFORM	5.0	13 U	UG/L
BROMOMETHANE	5.0	13 U	UG/L
2-BUTANONE (MEK)	10	25 U	UG/L
CARBON DISULFIDE	10	25 U	UG/L
CARBON TETRACHLORIDE	5.0	13 U	UG/L
CHLOROBENZENE	5.0	13 U	UG/L
CHLOROETHANE	5.0	13 U	UG/L
CHLOROFORM	5.0	13 U	UG/L
CHLOROMETHANE	5.0	13 U	UG/L
DIBROMOCHLOROMETHANE	5.0	13 U	UG/L
1,1-DICHLOROETHANE	5.0	13 U	UG/L
1,2-DICHLOROETHANE	5.0	13 U	UG/L
1,1-DICHLOROETHENE	5.0	13 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	13 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	13 U	UG/L
1,2-DICHLOROPROPANE	5.0	13 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	13 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	13 U	UG/L
ETHYLBENZENE	5.0	13 U	UG/L
2-HEXANONE	5.0	13 U	UG/L
METHYLENE CHLORIDE	10	25 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	5.0	13 U	UG/L
STYRENE	10	25 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	13 U	UG/L
TETRACHLOROETHENE	5.0	13 U	UG/L
TOLUENE	5.0	13 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	13 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	13 U	UG/L
TRICHLOROETHENE	5.0	13 U	UG/L
VINYL CHLORIDE	5.0	420	UG/L
O-XYLENE	5.0	13 U	UG/L
M+P-XYLENE	5.0	13 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	92	%
TOLUENE-D8	(88 - 110 %)	97	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	104	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCL
Reported: 01/03/00

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled :
Date Received:
Order #: 351381
Submission #:
Sample Matrix: WATER
Analytical Run 46484

DATE ANALYZED : 12/17/99
ANALYTICAL DILUTION: 1.00

ANALYTE	PQL	RESULT	UNITS
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	5.0	5.0 U	UG/L
METHYLENE CHLORIDE	10	10 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	5.0	5.0 U	UG/L
STYRENE	10	10 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	93	%
TOLUENE-D8	(88 - 110 %)	101	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	103	%

Columbia Analytical Services INC.
An Employee Owned Company
Mustard St., Suite 250, Rochester, NY 14609-69245
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 12-11-99 PAGE 1 OF 1

PROJECT NAME Griffin IRM
PROJECT MANAGER/CONTACT Mark Schmidt
COMPANY/ADDRESS 30775 Bainbridge Rd., Ste. 200 Solon, Ohio
TEL (440) 349-2708 FAX (440) 349-1514
SAMPLER'S SIGNATURE Bob Fabian

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☐ 95-3	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	8240							PRESERVATION pH < 2.0	pH > 12	Other
EFF-12-11-99	12-11-99	10:25	348621	WATER	2											X										

RELINQUISHED BY:
Signature Bob Fabian
Printed Name Bob Fabian
Firm URSGWC
Date/Time 12-11-99 11:08

RECEIVED BY:
Signature Tonya McCarthy
Printed Name Tonya McCarthy
Firm CAS
Date/Time 12.11.99 @ 1108

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name Gregory O. Gonzalez
Firm CAS
Date/Time 12-11-99 11:08

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
__ Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
__ 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: 5.8
Submission No: 12-177

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Check Form

Project/Client 11RSGWC Submission Number 12-177

Cooler received on 12·11·99 and opened on 12·11·99 by JM

1. Were custody seals on outside of cooler? YES (NO)
   If yes, how many and where? Client delivered
2. Were signature & date correct? YES NO
3. Were custody papers properly filled out (ink, signed, etc)? (YES) NO
4. Did all bottles arrive in good condition (unbroken)? (YES) NO
5. Were all bottle labels complete (*i.e.* analysis, preservation, etc)? (YES) NO
6. Did all bottle labels and tags agree with custody papers? (YES) NO
7. Were correct bottles used for the tests indicated? (YES) NO
8. Were VOA vials checked for absence of air bubbles, and noted if so? (YES) NO
9. Where did the bottles originate? CAS/A CAS/K CAS/S CAS/L CAS/X CAS/J (CAS/R)
10. Temperature of cooler(s) upon receipt: 5.8°C

Is the temperature within 4 ± 2° C?:	Yes ☒	Yes ☐	Yes ☐	Yes ☐	Yes ☐
If No, Explain Below	No ☐	No ☐	No ☐	No ☐	No ☐

Date/Time Temperatures Taken: 12·11·99 @ 1110

Thermometer ID: IR GUN **Circle One:** Temp Blank (Sample Bottle) Cooler Temp.

Explain any discrepancies:

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO_3					
2	H_2SO_4					
5-9*	P/PCBs (608 only)					

YES = All samples OK
NO = Samples were preserved at lab as listed
*If pH adjustment is required, use NaOH and/or H_2SO_4

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

CLIENT NOTIFICATION: